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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,604	11/15/2000	Youn Soo Bae	2529-000047	8368

7590

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EXAMINER

LE, DANG D

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 03/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/700,604

Applicant(s)

BAE

Examiner

Dang D Le

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-7 is/are pending in the application.
- 4a) Of the above claim(s) 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5 and 7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 November 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of group I, claims 1-5 in Paper No. 5 is acknowledged. The traversal is on the ground(s) that "unity of invention was found at the international level as indicated in the international search report". This is not found persuasive because although the unit of invention was found at the international level, claim 6 recites phase detecting means and position detecting means which require a search in class 318, subclass 437. In addition, claims 1-5 do not require the aforementioned limitations recited in claim 6 for patentability. Moreover, these inventions have acquired a separate status in the art as shown by their different classification

The requirement is still deemed proper and is therefore made FINAL.

Drawings

2. Figures 1A, 1B and 2A-2C should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1, 5 and 7 are objected to because of the following informalities:
- Claim 1, line 11, replace "ouside" with -- outside --.

- Claim 5, line 1, replace "The" with -- A --.
- Claim 7, line 1, replace "Electrical" with -- An electrical --. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-3 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 1, the specification and the drawings do not show a plurality of rotors. Only a single rotor with a plurality of magnets is shown in Figures 3 and 6.

Regarding claim 3, the specification (i.e. page 7, first paragraph) does not clearly show how the U and I shaped magnets and armatures are constructed and positioned together. Figures 3 and 6 show only the structure of the C shaped armatures and the relative positions between the magnets and the armatures.

6. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the C shaped armatures, does not reasonably provide enablement for U shaped and I shaped armatures. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. Figures 3

and 6 show only the structure of the C shaped armatures and the relative positions between the magnets and the armatures.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-3, 5 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because it is not clear how "a plurality of rotors" is rotated as shown in line 7. It is neither clear what "the alternate magnetic flux generated when rotated" means as shown in line 12.

Regarding claim 3, the addition of the word "type" as shown in last line to an otherwise definite expression extends the scope of the expression so as to render it indefinite. Ex parte Copenhaver, 109 USPQ 118 (Bd. App. 1955); Ex parte Attig, 7 USPQ2d 1092 (Bd. Pat. App. & Inter. 1986)

In addition, there is insufficient antecedent basis for the following limitations in the claims. Claim 1 recites the limitation "the body" in line 10. Claim 5 recites the limitations "the magnet pole pieces of the magnet", "the armature" and "the parallel structure" in line 2, "the skew structure", "the shaft" and "the rotors" in line 3, "the parallel" in line 4, "the lateral vibration" and "the shaft" in line 5. Claim 7 recites the limitation "the polarity of adjacent magnet pairs" in last line.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Oney.

Regarding claim 1, Oney shows a magnetic circuit (Figures 1-11) for a rotating apparatus having a parallel structure or a skew structure of magnet pole pieces of magnets (11) or armatures (12) with respect to a shaft (15), comprising:

- A rotating shaft (15);
- A plurality of supporters (16) fixedly mounted in a perpendicular direction to the circumference of the rotating shaft (15);
- A plurality of rotors (4 in Figure 1) rotated by attraction force and repulsion force of a magnetic field, a magnet pole piece being arranged in parallel with respect to the shaft on each end of the plurality of supporters (Figure 3); and
- A plurality of armatures (stators 12) having a coil (14) wound on the body thereof, the coil being mounted at an interval outside the rotors and receiving induced alternate magnetic flux of the rotors (because of magnets 11), the alternate magnetic flux generated when rotated, and magnet pole pieces being arranged in parallel or in skew with the rotating shaft (Figure 2 with flux arrow).

Regarding claim 2, it is noted that Oney also shows the rotors (11) having the parallel structure or the skew structure of the magnet pole pieces of the magnets with respect to the shaft so as to be rotated by a force of a magnetic field in a parallel direction with the rotating shaft (Figure 2).

Regarding claim 3, it is noted that Oney also shows the armatures having the parallel structure or the skew structure of magnet pole pieces of magnets or armatures with respect to the shaft (Figure 1), and the magnets (24) or armatures (not necessarily included) being one of C-type (not necessarily included), U-type (not necessarily included), and I-type (Figure 4).

Regarding claim 5, it is noted that Oney also shows a magnetic circuit (Figures 1-11) for a rotating apparatus which comprises, the magnet pole pieces of the magnet (11) or the armatures (12) having the parallel structure (Figure 2) or the skew structure with respect to the shaft and the rotors (11) being rotated by a force of a magnetic field formed in the parallel direction (Figure 2) with the rotating shaft and thus minimizing the lateral vibration of the shaft under rotation.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rakestraw et al. in view of Oney.

Regarding claim 7, Rakestraw et al. show an electrical apparatus (Figure 3) comprising:

- A shaft (114) having an axial direction and a radial direction;
- A plurality of supports (116) extending radially from the shaft;
- A plurality of arcuate stators (102) surrounding the shaft, each stator having a leg with a coil (108) attached thereto and ends (118) that mutually face each other to define a gap through which the magnets (106) rotate.

Rakestraw et al. do not show:

- Ends of each support having a pair of magnets mounted thereto, each pair containing magnets of opposite polarity, each magnet having pole faces extending parallel to the axial direction of the shaft;
- The polarity of adjacent magnet pairs being reversed with respect to each other. Rakestraw et al. use single magnets (106) and mount them on plate (104).

Oney shows ends (25, Figures 1 and 3-5) of each support (16) having a pair of magnets (26, 27) mounted thereto, each pair containing magnets of opposite polarity (N-S), each magnet having pole faces extending parallel to the axial direction of the shaft and the polarity of adjacent magnet pairs (26 and 27, Figures 3 and 5) being reversed with respect to each other for the purpose of improving efficiency.

Since Rakestraw et al. and Oney are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to mount on ends of each support with a pair of magnets, with each pair containing magnets of opposite polarity, each magnet having pole faces extending parallel to the axial direction of the shaft and the polarity of adjacent magnet pairs being reversed with respect to each other as taught by Oney for the purpose discussed above.

Information on How to Contact USPTO

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3431 for regular communications and (703) 305-3431 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.



DDL
March 9, 2002

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